

Short Communication

FEMORAL HEAD OSTECTOMY IN A DOG SUFFERING FROM HIP DYSPLASIA

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ABSTRACT: Femoral Head Ostectomy (FHO) is the surgical removal of head and neck of femur. A nine-month-old dog was reported with complaint of lameness. On clinical and radiographic examination, it was diagnosed as hip dysplasia of right hip joint. FHO was performed as palliative treatment. Two months after treatment dog was moving without signs of pain.

Key words: Dog, Femur head, Hip dysplasia, Ostectomy.

A normal canine hip joint is supported by muscles, joint capsule and strong ligaments. Among confirmatory defects in hip joint and supporting tissue, hip dysplasia or osteoarthritis have varying degree of synovitis, articular cartilage eburnation, osteophyte formation, subchondral bone sclerosis and remodelling (Barr *et al.* 1987). The inflammatory changes and exposed nerve endings of articulating surface in hip joint causes pain during movement with increase in body weight of the dog. Medicinal therapy with rest may be effective but as the pet grows, pain become unbearable. This pain can be relieved permanently by surgical excision of the head and neck of femur and this procedure named as femoral head ostectomy (FHO). The success of procedure to some extent depends on the size of dog and the time of surgical intervention (Gendreau and Cawley 1977) and use of physical therapy within 48 hours following an orthopaedic surgical procedure (Shumway 2007).

Case history and observations

A nine month old male Labrador dog was presented at Veterinary Clinical Complex with history of improper weight bearing and lameness in right hind limb during motion. Dog was kept on analgesic drugs for several weeks but there was no response. Besides it showed frequent symptoms of gastritis. The heart rate, respiration rate and temperature were within normal range. However, ventro-dorsal radiograph of both hip joints revealed a shallow acetabular cavity along with flattening of right

femur head (Fig.1). So it was a typical case of osteoarthritis in right hip joint.

Surgical treatment

The site over right hip joint was prepared for aseptic surgery. Anaesthesia was induced with Propofol @ 6mg/kg body wt. intravenously and dog was maintained on inhalant anaesthesia using Isoflurane. Dog was put on lateral recumbency keeping affected limb upward. A curvilinear incision was made at craniolateral skin over the hip joint. Then biceps femoris muscle was retracted caudally and the tensor fasciae lata muscle cranially. After incising the vastus lateralis muscle it was reflected ventrally. Lastly joint capsule was incised and excision of the right femoral head was performed with wire saw (Fig.2).

Muscle, tendons and skin were sutured in routine manner. Post operatively; broad spectrum antibiotic, analgesic and nerve tonics were prescribed for 7 days with antiseptic dressing till complete wound healing. Owner was advised to massage the affected area and passive physiotherapy after healing to avoid muscle atrophy. After 2 months of surgery animal start walking with complete weight bearing and slight lameness.

Discussion

The normal hip joint is a ball and socket joint. The acetabulum composes the socket of the joint. The head of the femur fits within the acetabular cavity and allowing

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Fig. 1. Radiograph showing shallow acetabular cavity and flattening of right femur head.

the hip to move freely in all directions. When the hip get damaged or become diseased this mobility can be affected that can lead to chronic pain and inflammation. FHO restores movement of the hip joint by removing the head of the femur and neck leaving an empty socket. The muscles of the leg hold the femur in place and scar tissue will form over time between the acetabulum and the femur to provide cushioning that is referred to as a 'false joint or pseudo joint' which provides pain-free mobility in most patients and the functionality of the pseudoarthrosis can be enhanced by early appropriate physical therapy (Peycke 2011). But it is important to note that following FHO surgery, dogs may always have some degree of lameness, even after proper rehabilitation is done. But it is due to the fact that dog is no longer working with a natural joint, rather with a false joint and gait abnormalities are the most commonly mentioned consequence of the surgery due to more craniodorsal movement of the femur during weight bearing as well as a frequent decrease in muscle mass on the operated leg (Harasen 2004). Canine limbs treated with FHO had significantly lower peak vertical, peak propulsive, and impulse propulsive forces compared to the normal limbs (Grisneaux *et al.* 2003). In veterinary medicine, the pioneers of FHO (Spreull 1961) found a promising, simple and inexpensive method for treatment of difficult hip problems.

Conclusion

The dog recovered fully after FHO surgery and regained essentially normal function of the affected leg,



Fig. 2. Bone pieces of femur head after FHO.

although the affected limb may have a slight decreased range of motion or decrease limb length after FHO and these changes are typically minimal and do not affect the dog's quality of life.

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